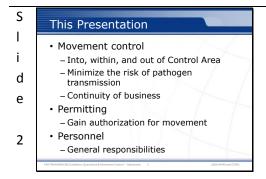


In a foreign animal disease (FAD) incident, control and containment of the disease agent is essential to eradication and recovery. Quarantine and movement control (QMC) are critical activities to protect animal health, by helping to prevent the disease agent from being transmitted to non-infected livestock and poultry populations. QMC stops and controls movements in a regulatory Control Area. This presentation focuses on diseases spread by direct and indirect contact rather than vector-borne diseases, as QMC is not particularly effective at preventing the movement of mobile insect vectors. However, QMC activities can still prevent the movement of infected hosts, which may be important in vector-borne FAD incidents. In an incident, quarantines and movement controls are handled through Incident Command, following local, State, and Federal laws/regulations. [This information was derived from the Foreign Animal Disease Preparedness and Response (FAD PReP)/National Animal Health Emergency Management System (NAHEMS) Guidelines: Quarantine and Movement Control (2014)].



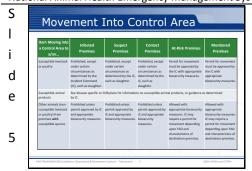
This presentation discusses movement control, permitting, as well as personnel involved in QMC activities. Movement controls are the critical activity which accompanies quarantines. The term "movement control" refers to controlling the movement of animals, animal products, and fomites into, within, and out of a regulatory Control Area while minimizing the risk of pathogen transmission. For individual premises, quarantines are imposed on Infected, Contact, and Suspect Premises, while movement controls focus on At-Risk and Monitored Premises. Continuity of business, or management movement, establishes specific criteria for the movement of animals or commodities from premises. This discussion of permitting covers the process, documentation and information needed to gain authorization for movement. Finally, this presentation describes the general responsibilities of personnel involved in QMC activities.



To repeat, the term "movement control" refers to controlling the movement of animals, animal products, and fomites into, within, and out of a regulatory Control Area. Criteria help to ensure that such movement poses a negligible risk of pathogen transmission. For individual premises, quarantines are imposed on Infected, Contact, and Suspect Premises, where movement is prohibited unless a specific permit is issued by Incident Command for essential movement. On the other hand, for At-Risk and Monitored Premises, common movements are allowed by permit (also called a blanket permit), based on specific criteria. These are the movements to which "movement control" refers.



As a quick review, these figures show examples of zones and areas on the left, and examples of the locations and types of premises that have been designated with specific classifications on the right. During an FAD outbreak, geographic locations will be classified or designated according to specific criteria related to disease or disease-free status. In these figures, the Control Area, where the discussion of "movement control" is focused, is illustrated as the dark pink Infected Zone in the center of the figures, plus the blue encircling Buffer Zone. Movement in the Free Areas continues (this includes the Surveillance Zone), based on routine procedures such as Interstate Certificates of Veterinary Inspection. It is important to note that these figures are examples, and are not to scale. More detail on designations of zones, areas, and premises, and the factors considered in determining their size is explained in the FAD PReP/NAHEMS Guidelines: Quarantine and Movement Control document, APHIS FAD Framework: Response Strategies (Manual 2-0) and in the Zones, Areas and Premises PowerPoint presentation associated with this series. [Example Zones, Areas, and Premises. Diagrams provided by: USDA; Graphic illustration by: Dani Ausen, Iowa State University]



This table and those on the next few slides are taken from APHIS Foreign Animal Disease Framework: Response Strategies (FAD PReP Manual 2-0). Together, they provide broad guidance for moving into, out of, and within a regulatory Control Area. As you follow this table from left to right, guidance is provided for moving a specific item from outside the Control Area to a specific type of designated premises inside the Control Area. For example, livestock susceptible to the disease of concern are generally prohibited from moving onto Infected, Suspect or Contact Premises within the Control Area. Exceptions are determined by Incident Command. However, susceptible livestock and products from susceptible animals may be authorized to move from outside the Control Area onto At-Risk or Monitored Premises, if specific criteria are met and a permit to move is granted. Similar guidance is provided for non-susceptible livestock moving from a premises with susceptible species, as seen at the bottom of the table on this slide. The specific criteria are based on science, the risk of disease transmission, and the circumstances of the outbreak. Biosecurity measures are essential to all authorized movements to reduce the risk of further transmitting disease and infecting new populations of animals. The Continuity of Business (COB) plans are mentioned on the second line and will be discussed shortly. [Movement Into a Control Area from Outside a Control Area. Content provided by: USDA]



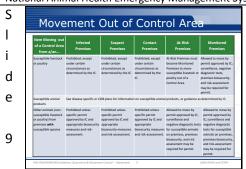
This table is a continuation of the table on the previous slide and can be read the same way from left to right. Looking down the left column, the decision to issue a movement permit for non-susceptible livestock moving from a premises without susceptible species into the Control Area may be based, in part, on the FAD and characteristics of destination premises. Equipment is allowed to move with appropriate biosecurity measures. Again, biosecurity measures are essential to all authorized movements to reduce the risk of further transmitting disease and infecting new populations of animals. [Movement Into a Control Area from Outside a Control Area. Content provided by: USDA]



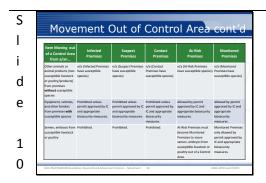
This table, as are all in this series, is taken from APHIS Foreign Animal Disease Framework: Response Strategies (FAD PReP Manual 2-0), and provides guidance for movement within a Control Area. As you follow this table from left to right, guidance is provided for moving a specific item from a specific type of designated premises, to another destination within the Control Area. This table again emphasizes that Infected, Suspect and Contact Premises will be under quarantine. Under quarantine, animal movements will be generally prohibited, except for certain circumstances as determined by Incident Command, such as slaughter. Some of the movements described on this table are authorized by a permit if specific criteria are met. Criteria involving surveillance, negative diagnostic tests, premises biosecurity, and risk-assessment may be required for a movement permit. Movement control and permit processes will change over time depending on situational awareness and operational capabilities. [Moving Within a Control Area. Content provided by: USDA]



This table provides a continuation from the table on the previous slide showing the guidance for movement within a Control Area. Equipment, including vehicles, is generally prohibited to move within a Control Area unless permitted by Incident Command while following strict biosecurity measures. The movement of semen or embryos from susceptible livestock is prohibited with no exceptions from moving from Infected Premises, Suspect Premises, and Contact Premises, but are allowed to move from At-Risk and Monitored Premises by permit approved by IC and with adherence to strict biosecurity measures. Some of the movements described on this table are authorized by a permit if specific criteria are met. Again, movement control and permit processes will change over time depending on situational awareness and operational capabilities. [Moving Within a Control Area. Content provided by: USDA]



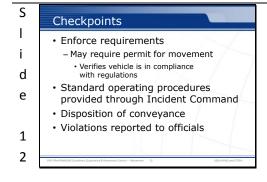
Movement from inside a Control Area to a location outside of the Control Area is highly controlled. Containment of the disease agent is critical, and movements leaving the Control Area may pose risks. However, movements that pose minimal risk to disease transmission are important for continuity of business. At-Risk Premises must become Monitored Premises to move susceptible livestock or poultry out of a Control Area. Monitored Premises may be allowed to move livestock by permit. Disease specific or Continuity of Business Plans may provide guidance on moving susceptible animals and/or products that present minimal risk of disease transmission. [Movement from Inside a Control Area to Outside a Control Area. Content provided by: USDA]



As a continuation of the previous table, further guidance is provided for movements out of a Control Area. Equipment, including vehicles, is prohibited to move out of a Control Area unless permitted by Incident Command while following appropriate biosecurity measures. Similar to the guidance presented for moving within a Control Area, moving semen and embryos from Infected, Suspect, and Contact Premises (which are under quarantine) is prohibited. Movement permits are approved by Incident Command. Surveillance, negative diagnostic tests, premises biosecurity, and risk-assessment may be required for a permit authorizing movement. [Movement from Inside a Control Area to Outside a Control Area. Content provided by: USDA]



Continuity of business (COB) or managed movement is a specific type of movement control, which establishes specific criteria for the movement of certain livestock and commodities from a premises. Producer participation in managed movement plans is *voluntary*. If producers choose to participate, specific criteria are required for movement. Criteria may be specific for the commodity, the origin and destination, as well as the disease pathogen. Managed movement mitigates the impact of the Federal area quarantine on unaffected producers, and is risk- and science-based, weighing the risk of disease transmission. Developed by publicprivate-academic partnerships, the criteria for these permitted movements typically require surveillance, cleaning and disinfection, biosecurity measures, and epidemiological information. Plans supporting continuity of business are in development for specific species of livestock and commodities. See information on the Secure Food Supply Plans in Appendix E of the FAD PReP/NAHEMS Guidelines: Quarantine and Movement Control. [The milk in this milk truck is one of the commodities that may be permitted to move. Photo source: Danelle Bickett-Weddle, Iowa State University]



Checkpoints are intended to enforce movement control requirements. Conveyances moving out of the quarantined area may require a permit for movement. This permit provides verification that a vehicle is properly cleaned and disinfected, and is transporting animals, fomites, or products in accordance with State and Federal laws and regulations. Specific standard operating procedures for checkpoints will be provided through Incident Command. Guidance for implementing checkpoints will include location of the checkpoint, inspection procedures, permit verification, necessary documentation, biosecurity requirements, and information to provide to the driver of the vehicle. Under most circumstances, animals should not be held at a checkpoint. Depending on the level of compliance, the conveyance should be returned to the premises of origin (if it cannot be permitted), or sent to its destination (if permitted), or Incident Command will provide further instructions. Violations, including failure to have the necessary permit, should be reported to the appropriate officials.



Permitting will facilitate the biosecure movement of animals, animal products, vehicles, equipment, and other materials without creating an unacceptable risk of disease spread. Permitting in an incident will cover three types of movement - essential movements (or specific permits) from quarantined Infected, Suspect, and Contact premises, commonly allowed movements (or blanket permits) from At-Risk and Monitored Premises out of the Control Area, as well as permits for voluntary COB movements. All permitting with regard to the Federal area quarantine will be overseen by Incident Command; States may also have permitting systems and processes that may require significant resources and information management capabilities. Permitting lessens the risk of transmitting the disease agent by considering risk assessments, surveillance information, biosecurity procedures, as well as national and World Organization for Animal Health (OIE) standards. It is essential that personnel responsible for permitting have access to the most recent information about the outbreak. New epidemiological and situational information may change permitting requirements.

Processes, Documentation

Clear processes, communication
- Specific, blanket, and COB permits
Need efficient response to requests
Alternatives may minimize
movements and permit requests
VS Form 1-27 or other forms may be utilized

It is important to ensure the Incident Command has clear processes for issuing permits for various types of movement (i.e., specific permits, blanket permits, and COB permits), and that this information is clearly communicated to those affected by the disease response effort. It is essential that Incident Command, through a Permit Team, can efficiently respond to and process permit requests through telephone, email, or other methods. A hotline may be required. Alternative arrangements to substitute for movements on to and off of quarantined premises may be necessary. Typically for movements of quarantined animals, for example to slaughter, a VS Form 1-27 would be required. This form has historically been used for movements of animals from an individually quarantined premises. For COB and other permitting, other forms may be used. Further work on documentation for permitting is needed for movement control and managed movement planning.

## Information Management USDA EMRS 2.0 System of record for Federal area quarantine Issues and tracks permits and denials Maintains data, even for permits issued by a different system

There will be a significant need for information management systems for permitting during an outbreak. Data collection, management, and analysis capabilities are required. The USDA's EMRS 2.0, is currently the primary information management system involved in permitting, and is considered the "system of record" for an animal health emergency response for a Federal area quarantine. As such, permitting will need to be tracked and/or provided by EMRS. This will allow a single system to maintain data that provides the capability to retrieve records of past movements, and filter them based on date, origin, destination, owner, species, vaccination status, and other criteria as well as document permit denials. At the very least, EMRS will have information about all permits issued by Incident Command, even if the permits were issued by a different information management system.



Typically, personnel in the Animal Movement and Permits Group will perform QMC activities, though other personnel are likely to be involved. Responsibilities may include providing recommendations on quarantines and guidance on permitted movements, responding to movement requests and issuing permits, communicating with owners/agents of animals subject to QMC, establishing premises quarantine, collaborating with other authorities and response personnel to enforce QMC protocols and implement biosecurity procedures, and staffing check points to ensure compliance with the permit system. All personnel need to be properly trained so they can work efficiently and collaboratively. In addition, personnel need to be aware of the hazards, and take the proper precautions to protect themselves.

S Response Coordination · Work with ICS personnel i - Biosecurity - Depopulation d Disposal - Cleaning, disinfection e - Wildlife management - Vector control Surveillance · Ensure authorized access and biosecurity 1 Coordinate business and welfare activities 7

Personnel/teams assigned to OMC activities will coordinate with other ICS personnel responsible for biosecurity, depopulation, disposal, cleaning and disinfection, wildlife management and vector control, and surveillance. QMC personnel will ensure that all personnel are properly authorized to enter quarantined premises for other control and eradication activities, and that they utilize appropriate biosecurity protocols. Additionally, personnel can help to coordinate business activities for producers and service companies, such as delivery services and livestock haulers. Coordination with those responsible for the welfare and continued care of quarantined animals is highly important. Critical movements, such as the delivery of feed and other supplies, must be given priority, but utilize biosecure methods. QMC activities will involve not only the Operations Section, but the Planning Section for situational awareness, the Logistics Section for resources and supplies, Finance/Administration to track costs and human resources, Public Information, and Safety. [This photo shows a collection of response personnel, including law enforcement and agricultural officials, coordinating QMC and other emergency response activities. Photo source: SES, Inc., Merriam, Kansas]

## S QMC Activities 1 · Premises quarantine, on-site i - Notify owners of quarantine status - Establish premises biosecurity d - Develop a list of all authorized movements e Enforce movement restrictions and biosecurity protocols - Ensure movements are authorized 1 8

The extent to which specific QMC activities are conducted will vary, depending on the size and scope of the incident, the personnel available, and the decisions of Incident Command. Significant resource and logistical limitations may make widespread QMC activities difficult to implement and/or enforce.

Assignment to a quarantined premises will involve on-site presence to:

- Notify animal owners and agents of quarantines imposed or lifted
- Work with a Biosecurity Team to establish premises biosecurity
- Develop a list of all people, animals, vehicles, and equipment authorized to enter or leave the property
- Enforce resultant movement restrictions and biosecurity/cleaning and disinfection protocols
- Ensure that movements on to or off of the premises are authorized.

QMC Activities (cont'd)

• Administer permitting system

- Ensuring permit applications are available to the public

- Responding to and evaluating permit requests

- Issuing permits, closing permits

- Tracking permitted movements

- Requires access to epidemiological and biosecurity information

Personnel may also be assigned to administer the permitting for movement control activities. Permitting activities will include the following:

- Ensuring permit applications are available to the public
- Responding to permit requests
- Evaluating permit applications
- Issuing permits
- Closing permits
- Tracking permitted movements

These personnel will require ready access to epidemiological and biosecurity information so that changes to the permitting criteria can be made as necessary. Permitting requirements may be fluid throughout an incident, particularly as the geographical area of the event expands or contracts.

• Managing permit information
 • EMRS 2.0
 • Documentation preserved, tracked and reviewable
 • Staff checkpoints
 • Interact with drivers
 • Ensure permit compliance
 • Shared responsibilities

Efficient large-scale permitting activities will require capable information management systems, including EMRS 2.0. Documentation of permits and movements should be preserved, tracked, and reviewable. Personnel will be involved in managing permit information or entering this information into EMRS 2.0. Checkpoints may be required depending on the scope of the event. Personnel/teams will staff and supervise roadside checkpoints, interacting with drivers entering the checkpoint. Checkpoints are intended to ensure compliance with the permit system to allow the permitted movement of animals, animal products, vehicles, equipment, and other materials. Based on authority, checkpoints may be staffed by transportation authorities and local law enforcement officials. [This photo shows officials from agriculture, law enforcement and transportation sharing responsibilities for permit compliance at a checkpoint. Agricultural conveyances are being checked as they enter and leave a Control Area. Photo source: Mark Davis, Kansas Department of Transportation!

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Responder Safety

Orientation
Potential hazards
Safety precautions
Hygiene requirements
Hazards
Physical, chemical, environmental, biological (zoonotic)
Required PPE

Of primary importance is the personal safety of each responder, particularly if a zoonotic disease is involved. All personnel responsible for QMC activities should receive a complete orientation covering potential hazards, necessary safety precautions, and hygiene requirements. Responders may face a variety of hazards, such as sharp edges, farm chemicals, uneven ground, slippery flooring, extreme temperatures, and injuries from animals. Responders must be aware of the biological hazards that may cause illness in animal populations, and if zoonotic, may cause illness to responders themselves. Required personal protective equipment (PPE) may include outerwear, safety goggles, high visibility vests, and respirators. [The ambulance in this photo is available in case of a medical emergency. Photo source: SES, Inc., Merriam, Kansas]

## Biological Hazard • Biosecurity to prevent disease spread - Understand pathogen transmission - Implement C&D with movements - Establish work zones to control access - Personal disinfection at departure

The hazard of spreading disease to susceptible animal populations must be addressed through biosecurity. QMC personnel, particularly those assigned on-site to quarantined premises, may work in known contaminated areas. Personnel responsible for evaluating the biosecurity of movements or assigned to checkpoints may unknowingly become contaminated. It is imperative to fully understand pathogen transmission routes. When movement of people, equipment, vehicles, and other articles is essential, proper cleaning and disinfection is necessary. The establishment of work zones control access to enter and leave quarantined premises and help prevent contamination of clean areas. Personnel working on quarantined premises to depopulate, clean, or disinfect must complete a personal disinfection regimen prior to departure from the premises.

S Waiting Period / Safety Officer Ī · Avoid contact with susceptible i animals not known to be infected · Time defined by Incident Command d Based on disease, task assignment, level of biosecurity e · Safety Officer - Ensures safe working conditions - Develops HASP 2 3

In addition to the personal disinfection regimen prior to departure from the quarantined premises, personnel who leave must comply with an appropriate waiting period, defined by Incident Command. During this time, personnel should not come into contact with any susceptible animal species that are not known to be infected. The waiting period will be based on the disease, task assignment, and level of biosecurity required. It is important that personnel understand this condition in order to avoid the actual or perceived transmission of the disease to naïve premises. Team members may be assigned to a variety of tasks that could present hazardous situations. The Safety Officer ensures safe working conditions for responders and develops the Incident Specific Health and Safety Plan (HASP) based on an analysis of these hazards.

All personnel should participate in training and exercises

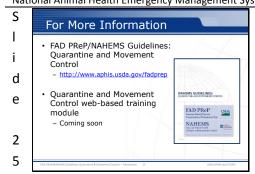
 Simulate real events
 Evaluate existing plans, identify areas for improvement
 Maintain communication and collaboration with all response agencies and stakeholders

While this presentation focuses on QMC from the perspective of APHIS, other agencies may also participate in QMC activities. It is important that personnel from a wide variety of agencies are trained and exercised for these activities, in order to account for personnel turnover, and to develop a robust cadre of trained responders. Exercises simulate real events in order to evaluate existing plans and identify needed areas of improvement. Potential responders should be encouraged to participate in exercises in order to understand the complex response efforts that will be required. Exercises also help to underscore the need to develop and maintain communication and strong collaborative relationships within the emergency management community, vertically (Federal-State-local), horizontally (interagency), and with industry stakeholders.

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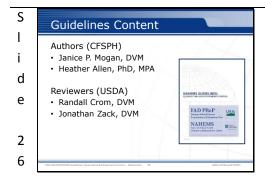
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Training

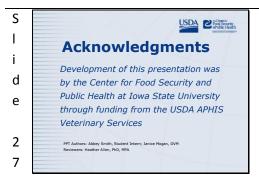


More details can be obtained from the sources listed on the slide, available on the USDA website (<a href="http://www.aphis.usda.gov/fadprep">http://www.aphis.usda.gov/fadprep</a>).

The Quarantine and Movement Control web-based training module is in development and coming soon.



The print version of the Guidelines document is an excellent source for more detailed information. This slide acknowledges the Guidelines' authors and reviewers. It can be accessed at http://www.aphis.usda.gov/fadprep.



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